Chapter 2
Background and Waste Stream Information

This chapter provides Clark County background demographic characteristics and municipal solid waste stream information to facilitate solid waste management planning in Clark County and its incorporated cities.

Geography

Clark County is located in Southwest Washington along the Columbia River, approximately 70 miles from the Pacific Ocean. The Columbia River forms the western and southern boundaries of the county and provides over 41 miles of river frontage. Urban Clark County is part of the northeast quadrant of the Portland, Oregon metropolitan area.

From an urban hub on the Columbia River, the county spreads north and east through a rapidly growing suburban band, across agricultural lands and a network of towns to the slopes of the Cascade Mountain Range. It's a compact area, measuring approximately 25 miles across in either direction. In 2000, the population estimate was 345,238 – a density of about 550 persons per square mile. The Columbia River and the Pacific Ocean strongly influences the climate, economy and recreational activities of the county. The Columbia River is the only fresh-water harbor for ocean-going commerce on the entire West Coast of North America. The river is the highway used to ship the county's waste, 160 miles by barge, to a regional landfill in Eastern Oregon.

Clark County lies within a broad geographic basin known as the Willamette-Puget Trough, formed by the Cascade and Pacific Coast mountain ranges. It is bounded on the south and west by the Columbia River, on the north by the Lewis River and on the east by the foothills of the Cascades. The Columbia is skirted by low-lying bottomlands, from which a series of alluvial plains and terraces extend north and northeast. Land elevations rise from less than 10 feet above mean sea level (msl) on the south and west flood plains, to more than 3,000 feet (msl) in the eastern portion of the County. The western half of Clark County lies at the junction of the Columbia River and Willamette Valley, and the southern portion is comparatively level.

Two-thirds of the county's 401,280 acres (627 square miles) lie in the foothills of the Cascade Range. These foothills, formed primarily from igneous rock, have been eroded into numerous ridges and narrow creek bottoms. Terraces and benchlands, where the Columbia and other rivers meandered during early geologic times, cover a large area. As the land slowly rose, the rivers cut deeper, leaving these former river bottoms well above flood stage. The soils throughout the foothills of the Cascade Range may be classified as silt or clay loam to depths of five feet, culminating in strongly weathered basalts and stony silt and clay loams. Farming land of high or better-than-

average productivity is limited in this area and lies mainly on the flood plains of the Columbia River. Lands of average productivity cover most of the higher terraces and benchlands from 5 to 15 miles inland from the Columbia River Soils throughout this area may also be generally classified as silt and clay loams, with substantial areas of gravely silt, clay loams and gravel found around Orchards, Sifton and immediately east of Vancouver,

Climate

Clark County's climate is influenced by its physical geography, which produces the wet, mild winters and moderately dry summer's characteristic of the region. The county's location, between the Cascade and Pacific Coast ranges, insulates it from the differing climates on either side of the mountains.

Prevailing winds over most of the county are northwesterly during the summer and southeasterly during the winter. Offshore temperatures of 50 degrees F to 55 degrees F temper the winds resulting in relatively high precipitation and a moderate temperature range from summer to winter. The average annual temperature in the county is approximately 50 degrees F.

Most of the County's precipitation falls as rain, 63 to 70 percent of it occurring from November through March. Normal annual rainfall ranges from 38 inches on the western flood plains to more than 114 inches in the mountainous northeastern part of the county. Normal annual snowfall ranges from less than 6 inches on the western plains to over 22 inches in the northeastern portion of the county.

Demographics

Population

Over the last decade, Clark County was one of the fastest growing counties in Washington State with a 2.1% annual growth. By 2000, the County's population had grown to 345,238, representing a 5.8% of the statewide total population. The county is changing from a small urban area, surrounded by a rural farm population, to a suburban-urban area. In Vancouver, areas such as Cascade Park, Hazel Dell, Orchards and Salmon Creek have been growing rapidly. Fisher's Landing, between Vancouver and Camas, is experiencing tremendous growth. And growth and changes are evident in rural areas around small cities and towns, such as Battle Ground, Ridgefield and to a lesser degree La Center, Yacolt and Amboy.

As shown in Table 2-1, Clark County's population increased from 238,050 to 345,238 between 1990 and 2000.

Table 2-1
Historical Census Population of Clark County and Cities
1970, 1980, 1990 and 2000

	Year			
Location	1970	1980	1990	2000
Clark County	128,455	192,230	238,055	345,238
Unincorporated	74,190	134,975	173,845	166,279
Incorporated	54,270	57,255	64,210	178,959
Vancouver	41,860	42,835	46,380	143,560
Camas	5,790	5,680	6,800	12,534
Washougal	3,390	3,835	4,765	8,595
Battle Ground	1,440	2,775	3,760	9,322
Ridgefield	1,003	1,060	1,330	2,147
La Center	300	440	485	1,654
Yacolt	490	545	600	1055
Woodland (partial)		85	95	92

Source: Office of Financial Management (OFM) Forecasting, State of Washington
Note: The City of Vancouver's population doubled in January 1997 as the result of a major annexation.

The current population and population density for each city and the county are shown in Table 2-2.

Table 2-2
Population and Population Density (April 2000)

Area	Population	Square Miles	Density(persons/sq mile)
Vancouver	143,560	44.7	3,212
Camas	12,534	12	104.5
Washougal	8,595	4.4	1,953
Battle Ground	9,296	3.6	2,582
Ridgefield	2,147	5.3	405
La Center	1,645	1.4	1181
Yacolt	1,055	1.0	1,055
Total County	345,238	627.0	551

Source: OFM Forecasting, State of Washington
Note: The City of Vancouver's population doubled in January 1997 as the result of a major annexation

Population Forecasts

Table 2-3 reflects the rapid growth that Clark County is experiencing

Table 2-3
Population Forecasts for Clark County

1980	1990	1995	2000	2005	2010	2015	2020
192,227	238,053	291,000	329,783	368,156	402,679	437,167	473,898

Source: State of Washington Office of Financial Management, High Protection

Senior Citizens

Clark County's 2000 population aged 65 and older, was 32,808 or 9.5 percent of the total population. Although Clark County is an appealing place for retirement, 85 percent of Washington State counties have a higher percentage of senior citizens than Clark County.

Housing

In 2000, Clark County had 134,030 housing units, a 44 percent increase from the 1990 total of 92,849 units. This breaks down to 102,204 single family, 28,025 multi-family, and 12,523 mobile homes. About 67 percent of the total residential units in Clark County are within the Urban Growth Area. The average sales price for single-family homes in Clark County in 1993 was $126,672. In 2000 the average home sales price was $175,400, an increase of 38%.

Table 2-4 shows the housing unit estimates for 2000.

Table 2-4
2000 Housing Unit Estimates
All Cities and Clark County, Washington

Cities	Single Family	Duplexes	3-4 Units	4+ Units	Mobile Homes	Other	Total
Clark County	19,920	44	19	6	6,935	0	26,924
Vancouver	36,779	3,416	1,018	16,116	1,611	101	59,041
Vancouver UGA	33,419	366	170	4,838	2,991	--	41,784
Camas	4,523	196	103	294	61	--	5,179
Camas UGA	142	4	4	--	9	--	159
Washougal	2,858	85	33	388	240	--	3,604
Washougal UGA	154	--	--	--	11	--	165
Battle Ground	2,408	192	169	410	336	--	3,515
Battle Ground UGA	332	20	--	--	17	--	369
Ridgefield	656	20	36	12	130	6	860
Ridgefield UGA	14	--	--	--	1	0	15
La Center	609	22	30	--	70	--	731
La Center UGA	29	--	--	--	4	--	33
Yacolt	343	6	--	6	63	--	418
Yacolt UGA	3	--	--	--	--	--	3
Woodland	13	--	--	--	34	--	47
Woodland UGA	2	--	--	--	10	--	12
Totals	102,204	4,373	1,582	22,070	12,523	107	142,859

The total number of households has increased by 41,181 since 1990. However the average size of households has remained constant, over the same period, from 2.66 persons per household in 1990 to 2.69 persons per household in 2000. The total number of families has increased by 27,063 since 1990. But the average number of persons per family has remained constant from 3.13 persons per family in 1990 to 3.15 persons per family in 2000.

Table 2-5 shows how household sizes in Clark County have changed over time.

Table 2-5
Historical Household Characteristics
In Clark County

	1970	1980	1990	2000
Total Households	40,998	68,875	88,440	127,208
Persons per Household	3.09	2.76	2.66	2.69
Total Families	33,689	51,701	63,895	90,958
Persons per Family	3.76	3.23	3.13	3.15

ECONOMIC TRENDS AND EMPLOYMENT

Due to a decline in the manufacturing and processing of wood products, the county's economy was forced to diversify during the last five to ten years. Wood product industries were once the county's primary industries; however, these industries have seen a significant decline in available material and markets since the 1980's. During the 1990's, a number of new high technology operations have sprung up in Clark County.

Table 2-6
Major Employers in Clark County

		1993	1998	1999
	Product or Service	Number of Employees		
Hewlett-Packard	Computer Printers	2,200	3,000	1,900
Fort James Corporation	Pulp and Paper	2,000	2,000	1,600
Evergreen School District	Public Education	1,600	2,000	2,174
Vancouver School District	Public Education	1,650	2,000	2,104
S E H America	Silicon Wafers	1,200	1,700	1,650
SW WA Medical Center	Medical Care	1,395	1,395	2,697
Clark County	County Government	1,300	1,300	1,435
Battle Ground School District	Public Education	910	1,100	1,040
Fred Meyer, Inc.	Retail Grocers	680	1,100	1,360
Bonneville Power Administration	Utilities	N/A	930	800
City of Vancouver	City Government	462	800	900
Safeway Stores	Grocers	NA	NA	962
WaferTech	Integrated Circuits	NA	NA	750

Source: Clark County Chamber of Commerce

Current trends show large increases in wholesale and retail trade and service sectors, which provide a variety of goods and services to the growing population. Wholesale and retail trade increased 18.7 percent from 1990 to 1994; and services increased by 28.2 percent. Employment in the manufacturing sector increased by 11.8 percent during this period (Clark County GIS).

At the end of 2000, there were 117,400 workers employed in Clark County.

Table 2-7 depicts the breakdown of workers by type of business or industry

Table 2-7 Non-Agricultural Wage & Salary Workers Employed in Clark County 2000		
		Annual Average
TOTALS		117,400
MANUFACTURING		19,100
Durable Goods		12,500
	Lumber & Wood Products	1,000
	Metals & Metal Products	1,400
	Computers & Industrial Machinery	3,500
	Electronics & Instruments	5,400
	Other Durable Goods	1,300
Non-Durable Goods		6,600
	Food Processing	1,100
	Textiles & Apparel	700
	Paper Products	2,700
	Plastics	1,000
	Other Non-Durable Goods	1,100
CONSTRUCTION & MINING		10,000
TRANSPORTATION & UTILITIES		7,200
Transportation		4,400
Communication & Utilities		2,800
WHOLESALE TRADE		5,500
RETAIL TRADE		23,000
General Merchandise		2,600
Grocery Stores		3,500
Auto Dealers & Service Stations		2,400
Other Retail Trade		14,500
FINANCE, INSURANCE & REAL ESTATE		4,600
SERVICES		28,600
Business Services		5,800
Health Care		8,400
Social Services		3,200
Other Services		11,200
GOVERNMENT		19,400

HOUSEHOLD AND PER CAPITA INCOME

According to the U.S. Commerce Department, Clark County's 2000 per capita income was $28,116. This was a jump of almost 30 percent over 1994 per capita income of $21,646.

Table 2-8 shows median household income estimates for each city.

Table 2-8 2000 Median Household Income Estimates Clark County, WA	
Incorporated Areas	2000 Median Household Income
Clark County	$52,786
Sources: U.S. Bureau of the Census, 2000;	

Growth Management

Growth management may be generally defined as "planning techniques and laws that state, county and local governments can adopt to manage changes resulting from population growth." The form that growth management takes in Clark County depends on the comprehensive land use plans of the county and the cities. Because a land use plan directly affects future population growth and economic development, the land use plan also has an impact on the count of waste generated in the county.

Land use planning focuses on urban growth and the services needed as growth occurs. Urban growth areas effectively concentrate urban development within planned geographic areas. By concentrating development within specified areas, communities are better able to provide quality public services at the lowest possible costs. Public utilities can be built and maintained more effectively. More variety and choice are available regarding where to live and work. Natural resources and environmentally sensitive areas can be more easily protected.

Local Conditions That Affect Solid Waste Management Practices

Certain geographic, demographic and land use conditions, specific to Clark County, affect the way solid wastes are best managed in the cities and unincorporated areas of the county. These conditions were considered when this Solid Waste Management Plan was developed.

The county and many of the cities within Clark County have been experiencing rapid growth in population, housing and employment. It's vital that solid-waste-related programs and facilities be flexible and adaptable to these changing conditions and have adequate capacity and funding to serve the growing number of system users. It's also important that local governments, private service providers and regulatory agencies anticipate and properly plan future growth.

The rainy conditions in Clark County require that solid waste handling facilities, such as landfills be properly developed, operated and closed to protect public health, safety and the environment. The variety of land uses in the county make it necessary for solid waste management programs to be comprehensive, covering the full range of waste generator needs.

As previously noted, Clark County residents get 97 percent of their drinking water from groundwater sources, so groundwater protection is of vital concern. Clark County Ordinance 1997-05-33 establishes critical aquifer recharge areas (CARA's) to protect public health and safety by preventing groundwater contamination. A major cause of potential groundwater contamination in Clark County is the release of hazardous substances from spills, leaks or discharges.

Clark County's municipal solid waste (MSW) is sent by barge to Finley Buttes Landfill in Morrow County, Oregon for disposal. The location of the landfill makes it necessary for the Plan's solid waste programs and facilities to be consistent with Oregon's requirements. In addition, with Oregon just across the river, solid waste management planning in Clark County must consider its impact on our neighboring state's solid waste programs.

The transportation network in Clark County, including road, rail and the river, is closely tied with that of neighboring counties and cities in Southwest Washington and Northwest Oregon. This network provides convenient import and export of solid wastes, including recyclable materials, and has been considered in the Plan.

Planning History

Waste Disposal

Historically, the primary disposal site for Clark County's municipal solid wastes was the Leichner Landfill, which operated from the late 1930's through December 31, 1991. The Leichner Landfill stopped accepting waste on that date and has completed final closure activities to conform with WAC 173-30 requirements. The Leichner Landfill is in the south central portion of the county. It was nearing capacity in 1985 when Ecology adopted a new set of Minimum Functional Standards (MFS) for solid waste landfills in the state. These standards went into effect immediately for new landfills and became effective in 1989 for existing landfills.

The 1985 solid waste management plan recommended siting a new landfill or landfills in Clark County to replace the Leichner Landfill. However, the 1985 plan was not specific about whether the landfill should be publicly or privately owned. Later the 1986 amendment to the plan stated that only a single site was to be developed and that the site was to be publicly owned.

Thirteen candidate sites were identified and the public was notified in November 1985. As expected, there was major opposition to all 13 sites, and the 13 opposition groups formed a coalition. The individual and coalition groups urged the county to consider solid waste disposal options other than sanitary landfilling, and they argued that

incineration with energy recovery or composting would eliminate the need for a new landfill.

Clark County began an investigation of alternative disposal methods and soon was able to convince the opposition groups that even with burning or composting, a solid waste landfill would still be needed for residual or bypass wastes. In 1986, Clark County issued a Request for Qualifications, asking potential private-sector vendors to suggest solid waste disposal methods other than landfilling for Clark County. Twenty-six respondents proposed six different disposal methods. The most common proposal was mass burn incineration. Transporting the waste by barge to a landfill in Eastern Oregon was also proposed.

Clark County staff and a consultant evaluated the various proposed disposal methods and recommended mass burn incineration with pre-separation of recyclable materials as the most appropriate method for Clark County. The waste exporting method was not recommended at that time because of three primary concerns – the county's inability to control waste disposal activities; lack of guaranteed disposal prices over the life of a contract; and the risks associated with another community's willingness to continue accepting waste over the long term. However, the Board of County Commissioners did not adopt a mass burn incineration proposal, but rather directed county staff to proceed with siting and permitting a landfill within Clark County. Staff were also asked to continue their evaluation of exporting wastes to an out-of-county site.

Clark County reduced the landfill search to a single site – the former Circle "C" Landfill site in the northwest portion of the county. The county performed extensive investigations of the site, including the preparation of an EIS. By mid-1987, the county was proceeding with land use permit hearings before the County Planning Commission for expansion of the site. However, by then, two other private vendors were also actively proposing the option of exporting waste to a landfill outside the county.

In late 1987, the U.S. Environmental Protection Agency (EPA) began a site investigation of the Circle "C" landfill site, focusing on the extent of any contamination resulting from the landfill. The county's single in-county site was potentially contaminated and located within a neighborhood with significant community opposition. In the meantime, private vendors were proposing exporting waste to out-of-county landfills, where the waste importation was requested as an economic development strategy.

In early 1988, the county stopped the in-county landfill siting and permitting process and formally requested proposals from private vendors for exporting the county's waste outside of Clark County County for disposal by any means allowable. The1988 plan amendment provided the county with the authority to request proposals and enter into a long-term contract for waste export and disposal.

Four proposals were received in June 1988. After extensive evaluation, Columbia Resource Company (CRC), a subsidiary of Tidewater Barge Lines, was selected in December 1988 as the preferred vendor. Negotiations began on a contract to construct one or more transfer stations within Clark County, and to transport and dispose of waste at the Finley Buttes Regional Landfill in Morrow County, Oregon. Negotiations with CRC

continued until a contract for waste transfer and export was executed in April 1990. In 1999, CRC and Finley Buttes Landfill was sold by Tidewater Barge Lines to Waste Connections Inc.

Presently, CRC operates two transfer and material recovery stations – one on Lower River Road in the Port of Vancouver; and the other on 117th Avenue, near Orchards. Together these two facilities handle about 15,000 tons of mixed municipal waste per month and provide special handling areas for household hazardous wastes. Recoverable materials are separated from the mixed waste stream for recycling. Non-recyclable waste is compacted and transported up the Columbia River by barge to Finley Buttes Landfill in Morrow County, Oregon near Boardman.

Waste Reduction and Recycling

In, 1991, all the cities and towns of the county adopted inter-local agreements with the county, committing themselves to participate in the county's contracted disposal and transfer system and the county's comprehensive planning process. The county began to implement a series of new recycling programs in response to changes in state law and the recommendations of the county's Citizen Recycling Committee.

Since, 1991, the solid waste program has implemented a variety of recycling collection and waste reduction education programs. Collection programs include the single-family curbside recycling program, which currently serves 68,010. A multi-family recycling program serves the same jurisdictions and provides recycling to 26,287 multi-family households. A pilot residential yard debris collection program was established in 1994 and expanded in 1996. By 2000, the residential yard debris collection program was available to all urban households and actually serving 24,588 households.

Educational programs, developed and implemented by solid waste staff, include the Master Composter/Recycler Program. This innovative partnership between volunteers and the county has recruited and trained more than 80 volunteers who support community recycling efforts, a neighborhood recycling contest and a school assembly program featuring "Recycle Man".

In 1993, a new Citizen Recycling Committee was convened by the Solid Waste Advisory Commission to serve as a focus group to evaluate the waste reduction and recycling programs. The focus group offered several recommendations for improvements, which have since been integrated into the programs. For example, county staff helped the City of Ridgefield coordinate a monthly recycling drop-off program for city residents. A multi-year Waste Stream Analysis research project was created with the goal of developing a baseline to measure solid waste program effectiveness.

Key developments in 1994 included the City of Vancouver's decision to seek requests for proposals for city garbage collection services. County solid waste program staff provided a variety of technical support services for this and other city projects.

County staff worked with other local government solid waste professionals around the state to establish the Solid Waste Forum to provide the means for intergovernmental dialogue on solid waste policy issues.

In response to safety concerns of local private industry solid waste handlers, the solid waste program developed an Infectious Waste Ordinance which was adopted by the Board of County Commissioners and the Southwest Washington District Board of Health. This ordinance banned the disposal of infectious waste in the mixed municipal waste system, established appropriate handling criteria and provided residential customers with inexpensive, safe and convenient alternatives for handling these wastes. These alternatives include commercial medical waste services and household sharps collection.

In 1995, the county Solid Waste Management Program was selected to participate in a national study of efforts to reduce breakage of glass containers being collected at the curb. Clark County's participation in these efforts has received national attention.

In 1995, technical services provided to commercial customers were expanded to include a Business Recycling Awards Group (BRAG). BRAG is part of a joint project with the Portland Metropolitan region local governments and businesses. Also that year, solid waste program staff provided technical assistance to the City of Ridgefield when it added curbside recycling services. Rural recycling efforts extended to the City of La Center, when county staff assisted the La Center City Council's effort to establish community drop-off recycling opportunities.

In 1997, the Moderate Risk Waste Program, previously at the Southwest Washington Health District, was combined with the Solid Waste Program to increase coordination and efficiency, particularly in educational efforts. At the same time, coordination increased with local and state agencies concerned with other environmental issues, including water quality, air quality, soil and habitat issues. In 1998, the Solid Waste Program continued to emphasize the coordination of solid waste and moderate risk waste education programs, and their relationships with water quality programs; expanded into additional areas of commercial recycling and waste management through the Build a Better Clark Program; and coordinated a litter clean-up program funded through a state grant. New recycling contracts were signed, after a competitive selection process, which included the addition of curbside recycling collection in the rural unincorporated areas and in the Cities of La Center and Yacolt. Solid Waste Program funding was stabilized through an amendment to the County's disposal contract, which set a flat annual program, fee rather than a tonnage-based fee. Transfer station tip fees were modified in the beginning of 1999, introducing a transaction fee and lowering tonnage-based fees, to provide stability to system volumes and costs.

Waste Stream Description

This section describes the quantities and composition of municipal solid waste (MSW) in Clark County (hazardous waste stream composition is addressed in the Moderate Risk Waste Chapter). A more detailed description of MSW quantities is presented in the Washington Utilities and Transportation Commission Cost Assessment (Appendix B).

Clark County Handling System

Clark County's (MSW) handling system is made up of two recycling and transfer stations, two dock facilities and an out-of-county landfill. Central Transfer and Recycling (CTR) Center and West Van Material Recovery Center (West Van) currently transfer approximately 640 tons per day to the Finley Buttes Regional Landfill in Morrow County, Oregon. Twice a week, a barge loaded with approximately 67 tractor-trailer sized containers travels 160 miles up the Columbia River to the Port of Morrow in Eastern Oregon. Each container is off-loaded and trucked 12 miles to the landfill.

Table 2-9
Historical MSW Disposal Quantities taken to the Transfer Stations
(Excluding Waste Transfer into and out of Clark County)

Year	MSW tons (includes special wastes	Population *	Pounds per Person per Day Disposed
1989	142,390	226,188	3.5
1990	148,260	238,053	3.4
1991	173,120	250,300	3.8
1992	174,450 est.	257,500	3.6
1993	183,200	269,500	3.7
1994	194,320	280,800	3.8
1995	197,400	291,000	3.8
1996	216,400	303,500	3.9
1997	223,900	319,000	3.8
1998	223,280	328,000	3.7
1999	227,259	337,000	3.7
2000	233,113	345,238	3.7

*Population Estimates are from Washington State Office of Financial Management, June 1990. Actual 1990 Census of 238,053 was not used.
1989 are Clark County Solid Waste estimates. They include estimated waste delivered to the Leichner Landfill (129,386 tons), and CTR transfer station (13,000 tons).
1990 are Clark County Solid Waste estimates. They include estimated waste delivered to the Leichner Landfill (133,262 tons plus 2,000 tons for scale anomalies) and CTR transfer station (13,000 tons).
1991 are Clark County Solid Waste estimates. They include estimated waste delivered to the Leichner Landfill (147,654 tons) and CTR transfer station (25,467 tons).
1992-97 based on Columbia Resource Company Reports for In-Bound Tonnage.

Historical Disposal Quantities

Table 2-10 shows estimated tons of MSW going to the landfill, through the transfer stations in Clark County. Historical data is often used to identify disposal trends and to estimate future solid waste tonnages. This table focuses on historical tons disposed, rather than on waste generated, dues to lack of data on recycling, illegal dumping, import and export and self-haul in past years. New methods for measuring and

monitoring the individual solid waste and recycling streams are described in Chapter 3, *Waste Monitoring and Measurement* and Chapter 14, *Special Wastes.*

The MSW numbers in Table 2-10 generally include paper, wood, construction/demolition debris, food wastes, packaging wastes, yard wastes and household hazardous wastes. The data includes both residential and non-residential solid wastes

Waste Composition Estimates

Clark County regularly conducts a waste stream analysis to determine the make-up of the waste that is delivered to the two transfer stations. The most recent waste composition study was done during 1999. The results will be included in the Appendice. Table 2-10 and Figure 2-1 show that the county's waste stream contains significant amounts of recyclable paper, food waste, construction/demolition waste and plastics.

When considered together, construction/demolition waste and wood waste represent the largest quantify of material – 15.9 percent –disposed in the county's waste stream. At 13.3 percent, recyclable paper is third. Food waste, at 14.5 percent, is second (WSA). The large volume of wood and other construction waste directly reflects the high level of construction activity in Clark County.

It is important to note, although the percentage of hazardous/special waste in the overall waste stream seems small (2.4%), the environmental impact of improper disposal of this material is greater than its volume would suggest. A detailed analysis of hazardous waste is presented in the Chapter on Moderate Risk Waste.

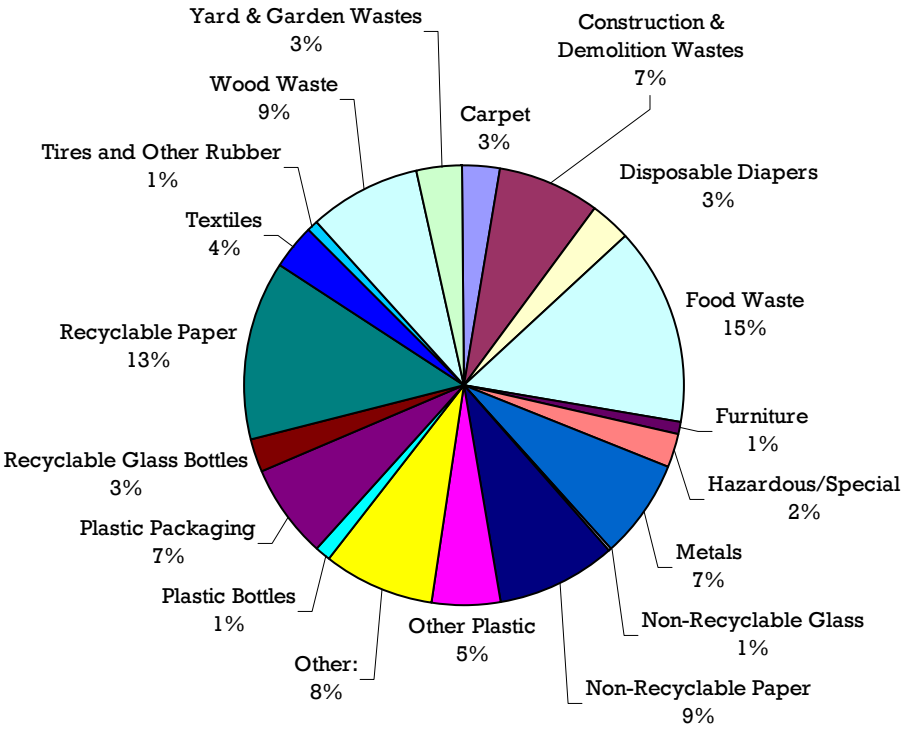
Table 2-10 shows Clark County's MSW stream characteristics, including the estimated percentage of the waste stream total based on the analysis of the 1999 waste stream composition

Table 2-10
Composition of Disposed Wastes

Type of Material	Waste Stream Total By Weight
Carpet	2.8
Construction & Demolition Wastes	7.4
Disposable Diapers	3.1
Food Waste	14.5
Furniture	0.8
Hazardous/Special	2.4
Metals	7.2
Non-Recyclable Glass	0.5
Non-Recyclable Paper	8.5
Other Plastic	5.1
Other:	8.1
Plastic Bottles	1.0
Plastic Packaging	6.8
Recyclable Glass Bottles	2.6
Recyclable Paper	13.3
Textiles	3.5
Tires and Other Rubber	0.6
Wood Waste	8.5
Yard & Garden Wastes	3.3
TOTALS	100.0

Source: Clark County 1999 Waste Stream Analysis

Figure 2-1 Composition of Disposed Wastes



Source: 1999 Clark County Waste Stream Analysis
Note:"Other" includes inerts and miscellaneous; furniture; rubber, etc.

Waste Haulers

Table 2-11 shows waste tonnages transferred through Columbia Resource Company transfer stations: West Van and CTR during 2000. The two transfer stations received an 233,113 tons from both residential and non-residential waste streams. The majority of waste is hauled by City of Vancouver's contracted waste hauler, Waste Management of Vancouver, Clark County and the City of Vancouver's contracted hauler, Waste Connections Inc.; Camas and Washougal's contracted hauler, Evergreen Waste Systems; individual haulers such as the City of Camas; and residential and non-residential self-haulers.

Table 2-11 indicates the amounts hauled by each group.

Table 2-11
Tons of Garbage Disposed in 2000

Jurisdiction	Residential Waste**	Non Residential Waste***	Total
WUTC G-Certified Hauler (WCI)	55,545	49,060	104,605
- Unincorporated Urban Clark County - City of Battle Ground - City of Vancouver (east portion) - City of La Center - City of Ridgefield (City Contract with WC)			
City of Vancouver (WMV Contract)			
- west Vancouver	31,741	28,034	59,775
City of Camas			
- residential & commercial (City Crews)	5,385		5,385
- commercial drop box service (EWS Contract)		4,024	4,024
City of Washougal (EWS Contract)	2,315	2,856	5,171
SUBTOTAL Tons Collected as MSW	74,986	83,974	178,960
SUBTOTAL Self-Haul* Tons Delivered as MSW	28,755	25,398	54,153
TOTAL MSW Delivered to Transfer Stations ****	123,783	109,330	233,113
Minus CRC Recovery from Tip Floor			12,657
TOTAL MSW Disposed			220,456

* Residential and Commercial waste delivered by the generator
** Estimated as 53.1% of MSW via 1999 Waste Characterization Study
*** Estimated as 46.7% of MSW via 1999 Waste Characterization Study
**** Includes Special Wastes

Fluctuations

As the two primary measuring points for MSW in the County, monthly data from CTR and West Van show the extent of seasonal fluctuations in tons disposed.

Table 2-12 demonstrates monthly disposal quantities for each of these facilities in 2000

Table 2-12

Waste Quantity Fluctuations by Month during 2000

2000	CTR (tons)	CTR (%)	West Van (Tons)	West Van (%)	Total (Tons)
Jan-00	12,552	67.92%	5,504	30.48%	18,056
Feb-00	12,128	67.92%	5,728	32.08%	17,856
Mar-00	14,170	69.74%	6,149	30.26%	20,319
Apr-00	12,954	70.07%	5,533	29.93%	18,488
May-00	14,055	66.98%	6,928	33.02%	20,984
Jun-00	14,779	71.34%	5,937	28.66%	20,716
Jul-00	14,102	71.84%	5,528	28.16%	19,629
Aug-00	15,324	72.13%	5,920	27.87%	21,243
Sep-00	13,733	69.76%	5,952	30.24%	19,685
Oct-00	14,203	71.58%	5,639	28.42%	19,842
Nov-00	13,303	71.62%	5,272	28.38%	18,574
Dec-00	12,475	70.40%	5,245	29.60%	17,721
Total	163,778	70.26%	69,335	29.74%	223,113

Notes: All figures are presented in tons and as a percentage of total tonnage. Figures are based on Columbia Resource Company records. Figures exclude waste Collected by Ted's Sanitary Service and delivered to the Cowlitz County Landfill.